

**FACT SHEET**

# NOISE LEVELS CREATED BY COMMON CONSTRUCTION TOOLS

**Workers in industries, such as construction, use a variety of tools and machinery in the course of their work. One of the hazardous aspects of using this equipment, or being around people who use it, is noise.**

**The two factors that make noise a hazard are the loudness of the noise (amplitude) and the length of time a person is exposed to it.**

## HEARING LOSS

If you use noisy tools and machinery at work, you are at risk of hearing loss.

Loud noise going on for too long will cause permanent damage to your hearing. It is not a general loss of hearing; instead you lose the ability to hear some frequencies of sound in the initial stages.

Noise-induced hearing loss (hearing loss due to excessive noise) can occur gradually over time, or it can be instantaneous if you are exposed to a one-off, very loud noise like a shotgun going off next to your ear. The damage that hearing loss causes cannot be fixed – once you lose the ability to hear noise at a certain frequency, it is gone forever.

## NOISE TERMINOLOGY

Noise is measured in decibels - dB(A). In New Zealand, the 'average' exposure limit is 85 dB(A), or 85 decibels averaged over an 8-hour period.

Noise doubles every 3 decibels. This means that a tool operating at 88 dB(A) is actually twice as loud as a tool operating at 85 dB(A).

## IN THE WORKPLACE

It is difficult to control noise in many workplaces. You may wear earmuffs or earplugs when you are using your own tools, but be aware of other workers also using loud tools.

As a rule of thumb:

If you're working on a construction site, and you can't hear the person next to you speaking unless they raise their voice, you should be wearing hearing protection.

## CONTROLLING NOISE

If a person is exposed to the noise levels below, an employer must ensure that appropriate control measures are taken. If appropriate control measures are not taken, hearing damage will begin to occur;

- > In excess of an 8 hour noise equivalent of 85 dB(A) or;
- > A peak of more than 140 dB(C)

If this is happening, employers must put a noise management plan in place to keep the noise levels down.

It is recommended that a noise survey is carried out to determine if the controls are working. This can be a:

- > preliminary survey, or
- > full assessment.

More information on noise surveys is found in the *Approved Code of Practice for the Management of Noise in the Workplace*.

#### Ways to control noise:

1. Eliminate (get rid of) the noise source.
2. Substitute noisy machinery with quieter machinery ('buying quiet').
3. Engineering controls: treat the noise at the source or in its transmission path (using sound dampeners or silencers, noise barriers and isolation), and maintaining machinery.
4. Introduce noise control measures (training and education, job rotation, job redesign or designing rosters to reduce the number of workers exposed to noise).

#### Using Hearing Protection Equipment

**(HPE) effectively** - Using devices to protect the hearing of workers. This means you need to:

1. Have hearing checked annually by a competent person, for example a occupational health nurse or an audiologist.
2. Provide the right kind of HPE. You can consult the *Approved Code of Practice for the Management of Noise in the Workplace* for help to choose the right gear for each job or environment, or you can get professional assistance with this.

3. Keep HPE well maintained and fit for the job it has to do. Replace worn or damaged HPE promptly.
4. Make sure that HPE is worn correctly and worn all of the time workers are exposed to noise, because even a short break in protection does almost as much damage as being exposed to the noise all day.

Unfortunately even effective use of HPE doesn't guarantee protection from Noise Induced Hearing Loss (NIHL) for everyone. This is because some people's ears are more sensitive than others. However effective use of HPE does greatly reduce the risk that your employees will get NIHL.

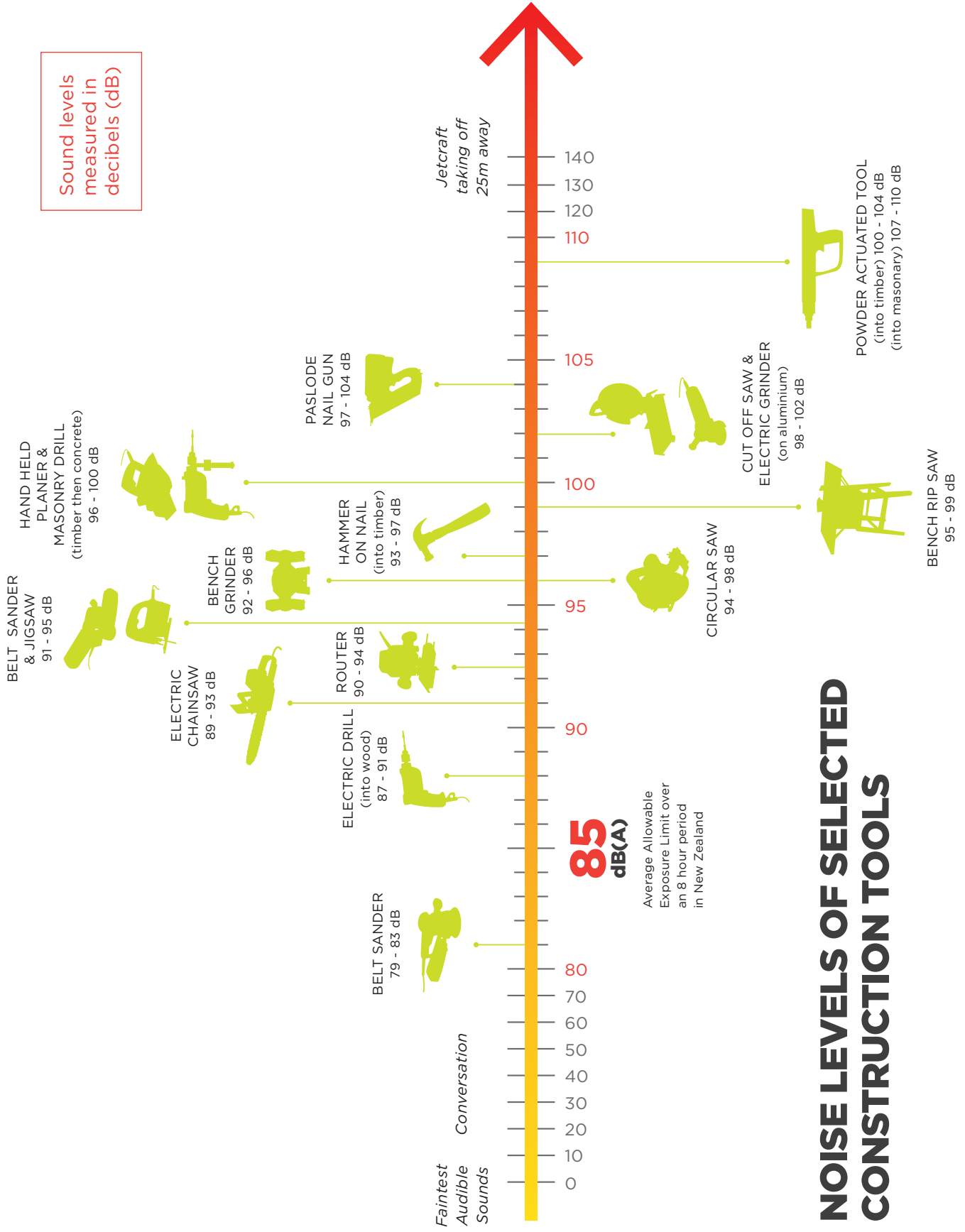
The table below indicates the length of time workers can safely use standard construction equipment without HPE.

If you work regularly in a noisy environment, with and around construction tools and machinery, WorkSafe considers it best practice to always wear HPE on the job.

ACTIVITY	DECIBEL LEVEL	MAXIMUM SAFE EXPOSURE WITHOUT HEARING PROTECTION (EACH DAY)
Normal Conversation	60 Decibels	Max. Time Of Exposure: More Than A Day
Driving A Vehicle	70 Decibels	Max. Time Of Exposure: More Than A Day
Standing By A Busy Road	80 Decibels	Max. Time Of Exposure: 24 Hours
Operating Forklift Trucks	84 Decibels	Max. Time Of Exposure: 8 Hours
Air Compressors	85 Decibels	Max. Time Of Exposure: 8 Hours
Operating A Welder	85 Decibels	Max. Time Of Exposure: 8 Hours
Operating A Lawnmower	91 Decibels	Max. Time Of Exposure: 2 Hours
Operating A Hand Held Power Tool	94 Decibels	Max. Time Of Exposure: 1 Hour
Belt Sander	95 Decibels	Max. Time Of Exposure: 30 Mins
Jigsaw	95 Decibels	Max. Time Of Exposure: 30 Mins
Masonry Drill (Timber Then Concrete)	96 Decibels	Max. Time Of Exposure: 15 Mins
Bench Rip Saw	96 Decibels	Max. Time Of Exposure: 15 Mins
Operating A Grinder	97 Decibels	Max. Time Of Exposure: 30 Mins
Operating A Circular Saw	99 Decibels	Max. Time Of Exposure: 18 Mins
Operating A Bench Grinder	99 Decibels	Max. Time Of Exposure: 18 Mins
Operating A Crane	102 Decibels	Max. Time Of Exposure: 10 Mins
Operating A Jackhammer	105 Decibels	Max. Time Of Exposure: 5 Mins
Operating A Bulldozer	107 Decibels	Max. Time Of Exposure: 3 Mins
Using Explosive Power Tools (Nailgun Etc)	120 Decibels	Max. Time Of Exposure: 10 Seconds
Earth Drilling/Moving Equipment	120 Decibels	Max. Time Of Exposure: 5 Secs
Hammering Nails Into Timber	131 Decibels	Max. Time Of Exposure: Zero
Paslode Nail	138 Decibels	Max. Time Of Exposure: Zero
Powder-Actuated Tool Into Timber	143 Decibels	Max. Time Of Exposure: Zero
Powder-Actuated Tool Into Masonry	147 Decibels	Max. Time Of Exposure: Zero

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Sound levels measured in decibels (dB)



## NOISE LEVELS OF SELECTED CONSTRUCTION TOOLS